Annual Report of the Cancer Treatment and Research Foundation of Nova Scotia

April 1, 1987 to
March 31, 1988

89-04928/

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FOUNDATION BOARD

Mr. C. H. Durland, Q.C.
Chairman

Mr. P. Jackson

Mrs. M. Ray

Mr. W. Gilbert

Major A.G.L. Lawrence
(Ret'd)

Mrs. N. Stephen

Mrs. M. Grantham

Mr. G. Martin

Mrs. F. Stevens

Mrs. J. Henderson

Dr. E.A. Moffitt

Dr. W. C. Tupper

Mr. R. D. Isner

Photo Unavailable
for: Dr. P. M. Lavigne
Miss S. Medjuck

CHAIRMAN'S REMARKS

Hon. David Nantes
Minister of Health
Province of Nova Scotia

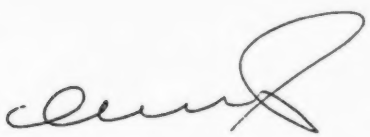
Dear Mr. Minister,

It is once again my pleasure to report on the Cancer Treatment and Research Foundation of Nova Scotia for the year ending March 31st, 1988.

In the few short years of the Foundation's existence we have made substantial advances in cancer treatment and programming. Unfortunately, we are at the stage now where our physical resources limit our ability to fully carry out our mandate. As in the past, we experience manpower problems, but an active recruitment program has borne favorable results and we expect to be a full complement in the near future. We do require additional space and are actively pursuing this objective.

From the contents of this Report you will note that our Foundation is active and agressive in its programming and this reflects a definite maturity of our Foundation as an active treatment and research facility.

We have an excellent and dedicated staff who are dedicated to the advancement of our Foundation and the quality of care we give to our patients. I would particularly like to acknowledge the leadership of Dr. D. H. Thomson, Executive Director - Medical, Mr. Harry Churchill, Executive Director -Administration, as well as Dr. Emerson Moffitt, our Clinic Director.



C. H. Durland
Chairman

ADMINISTRATION REPORT

The Foundation has been active during the past year. The attached section on Departmental Reports will indicate the activities that have taken place in our Foundation

There were two meetings of the Provincial Cancer Agencies during the year and they continue to be very beneficial to our Foundation.

Dr. Paul Joseph was appointed to our staff as a Radiation Oncologist on March 1st. Unfortunately, we are still unable to have our complement of medical staff filled.

Committees of the Board met on a regular basis during the year. The Communications Committee continues to be a very active committee, providing assistance and direction for Foundation programs. The Planning Committee received a report from William Nycum and Associates regarding our need for additional space. Within the Foundation itself, a Medical Manpower Committee was established. The Health Records Committee continues to review the documentation in our records and the need for improving the information kept on patient charts. The Cancer Registry Committee met on a regular basis and some of the work carried out is reflected in the Annual Cancer Incidence Report.

On July 1, 1987, Dr. Moffitt was appointed Clinic Director. Under his direction, several task forces were established. Of particular note was the task force established to look at Clinical Trials and another to review the Mission Statement of the Foundation.

On November 18, 1987, the Cape Breton Clinic was established with the gynecologists from Sydney and Halifax joining together to follow-up those patients from Cape Breton who normally would have come to Halifax. We are very appreciative of the staff of St. Rita Hospital and our Foundation in establishing this Clinic.

During the year, the Coping with Cancer group met within our Foundation. This group is also assisted by the Nova Scotia Division of the Canadian Cancer Society. Congratulations go to Mrs. Earl Marchand and Mrs. Jan White who started this self help program for cancer patients.

In closing, a thank you is expressed to all staff of the Foundation for their efforts in providing care for patients of our Foundation.

COMMITTEES

EXECUTIVE COMMITTEE

Mr. C. H. Durland
Mr. H. J. Churchill
Dr. D. H. Thomson
Mrs. F. Stevens

COMMUNICATIONS COMMITTEE

Mr. G. Martin - *Chairperson*
Dr. J. Aldrich
Mr. H. J. Churchill
Mrs. S. Hardy
Mrs. J. Henderson
Mrs. M. Ray
Dr. R. Wierzbicki

FINANCE AND PERSONNEL COMMITTEE

Mrs. F. Stevens - *Chairperson*
Mr. H. J. Churchill
Mr. C. H. Durland
Mr. R. O. Isner
Major A.G.L. Lawrence (ret'd)

RESEARCH COMMITTEE

Dr. E. Moffitt - *Chairperson*
Dr. J. Aquino
Dr. A. Pyesmany
Dr. A. Thomson
Dr. D. H. Thomson
Dr. W. C. Tupper

ADMINISTRATION

Dr. D. H. Thomson
Executive Director, Medical

Mr. H. J. Churchill
Executive Director, Administration

Dr. E. A. Moffitt (Interim)
Clinic Director

Mr. G. L. Hatcher
Office Manager

HEADS OF DEPARTMENTS

Dr. J. E. Aldrich
Medical Physics

Dr. J. F. Filbee (Acting)
Radiation Oncology

Mrs. L. M. Burgess
Technical

Dr. R. J. Wierzbicki (Acting)
Medical Oncology

Mrs. T. F. Croucher
Health Records

Dr. R. C. Fraser
Surgical Oncology and Medical Specialties

Mrs. J. L. Darley-Dickson
Nursing

Mrs. J. M. Smith
Data Processing

HALIFAX CANCER CLINIC MEDICAL STAFF

DERMATOLOGY
Dr. J. Klotz
Dr. J. B. Ross

GYNAECOLOGIC ONCOLOGY
Dr. R. C. Fraser
Dr. J. F. Jeffrey
Dr. M. G. Tompkins

MEDICINE
Dr. S. F. Bedwell
Dr. L. Fernandez
Dr. J. D. Gray
Dr. O. A. Hayne
Dr. V. W. Ing
Dr. R. L. Kirby
Dr. P. L. Landrigan
Dr. G. R. Langley
Dr. D. J. MacIntosh
Dr. J. J. P. Patil
Dr. S. K. Robinson
Dr. J. L. Sapp
Dr. W. F. Schlech
Dr. B. L. Sheridan

MEDICAL ONCOLOGY
Dr. R. E. MacCormick
Dr. T. Vandenberg
Dr. D. F. White
Dr. R. Wierzbicki

RADIATION ONCOLOGY
Dr. J. F. Filbee
Dr. B. H. Jo
Dr. K. Singapuri
Dr. D. H. Thomson
Dr. O. S. Wong

SURGERY
Dr. C. D. G. Bethune
Dr. A. Bodurtha
Dr. C. Bugden
Dr. M. T. Casey
Dr. J. P. Curry
Dr. C. H. Graham
Dr. M. Gross
Dr. G. P. Konok
Dr. A. S. MacDonald
Dr. A. C. MacDonald
Dr. S. T. Norvell
Dr. P. Roy
Dr. B. J. Steele

UROLOGY
Dr. R. B. Auld
Dr. S. A. Awad
Dr. P. Belitsky
Dr. W. A. Ernst
Dr. F. G. Mack
Dr. S. Yoon

NEUROSURGERY
Dr. R. O. Holness
Dr. W. J. Howes

OTOLARYNGOLOGY
Dr. E. L. Attia
Dr. G. M. Novotny
Dr. F. S. H. Wong

PATIENT STATISTICS

FOUNDATION PATIENTS SEEN AT HALIFAX CLINIC
APRIL 1, 1986 - MARCH 31, 1988

Year	New Patients	Number of Patient Visits		
		Clinic	Radiation	Chemotherapy
Apr. 1, 1987 Mar. 31, 1988	1,928	15,059	20,038	1,988
Apr. 1, 1986 March 31, 1987	2,246	13,935	20,877	1,580

PATIENTS TREATED BY RADIATION

Type of Treatment	No. of Patients		No. of Treatment Visits	
	Apr. 1/87 Mar. 31/88	Apr.1/86 Mar. 31/87	Apr. 1/87 Mar. 31/88	Apr. 1/86 Mar. 31/87
X-Ray	160	158	452	672
Linear Accelerator	682	649	9,843	10,066
Cobalt	924	973	9,443	9,848
Gold Seed	63	45	63	45
Cesium	123	110	126	125
Beta Ray	46	46	46	46
Other (P32,I131)	65	75	65	75
TOTAL	2,063	2,056	20,038	20,877

REPORTS
OF
DEPARTMENTS AND DIVISIONS

CLINICAL TRIALS UNIT

This past year was a very productive year for the Clinical Trials Unit. A major activity that was undertaken was a Task Force on Clinical Trials mandated by the CTRF Board. The objective of the Task Force was to review the role of the Clinical Trails Unit as well as determine future directions in which it can strengthen its role within the medical and allied health staff of the CTRF and the community at large. The report of the Task Force will be presented to the Board in the Spring of '88.

The conduct of Clinic Trials is an important function of the work carried out in any Oncology Centre. Presently, at the Foundation the staff of the unit is dedicated but small, with one full time nurse and data manager. The staff of the unit are experienced in the conduct of Clinical Trials and are able to function independently.

Currently there are 19 active clinical trial studies in all major disease sites. Cumulative accrual is now well over 420 patients. There continues to be 4 major Phase III studies comparing a new therapeutic modality versus standard treatment. Again this year the unit has maintained an active role in multi-centered Phase II investigational new drug programs.

The C.T.U. continues to interact with several different sponsoring agencies, such as Pharmaceutical Companies and several multi-institutional Clinical Trials Groups.

A main goal for the staff of the C.T.U. has been continuing education. This past year both Mrs. Nolan and Mrs. Hirsch attended the Adria Company Investigators Meeting and Mrs. Nolan represented this unit at the Data Managers Conference sponsored by the NCIC.

The future goals of the unit are to implement the recommendations of the Clinical Trials Task Force.

RECOMMENDATIONS

1. The Board of the CTRF will create a Department of Clinical Trials within the CTRF with a Co-ordinator who is responsible for staffing, overall budgetary and administration of the studies with various Principal Investigators.

2. The Co-ordinator of the Clinical Trials Unit will report directly to the Executive Director, Medical.

3. The Clinical Trials Unit be funded as a routine part of the CTRF budget or from the Department of Health and Fitness. If this is not forthcoming from the Department of Health and Fitness, the Foundation will be requested to support the unit.

4. The CTRF establish an Advisory Research Committee for the Clinical Trials Unit, composed of the three Medical Department Heads or their delegates to determine the future goals of the Clinical Trials Unit, specifically:

   (a) Activation of future studies as recommended by the Disease Site Multi-disciplinary Group.
   (b) Develop a relationship with the Clinical Trials Unit and other health care and research institutions.
   (c) Assess the need for future personnel.

   This Committee will replace the Clinical Research Coordinating Committee.

5. The Clinical Trials Unit of the CTRF will be the sole organization through which Clinical Trials research will be conducted by all physicians who work within the CTRF.

6. The Clinical Trials Unit should have adequate staff and space to function effectively with current workload.

7. The Clinical Trials Unit of the CTRF should encourage referring physicians within the Province of Nova Scotia interested in cancer related research to collaborate and actively participate in the patient care and follow-up of clinical trials sponsored by the CTRF's Clinical Trials Unit.

8. The Clinical Trials Unit within the CTRF should encourage and develop increased exposure within the Faculty of Medicine and within the Medical and Allied Health Care Community of the Province of Nova Scotia.

This has been a time of introspection for the Clinical Trials Unit. We hope that the next year will bring out new changes and challenges.

DATA PROCESSING DEPARTMENT

Although the 1987 - 1988 period did not bring major changes to the Foundation's Patient Information System, it was a busy one for the Data Processing Department in general. The focus of the Department expanded in several areas including micro-computers and sophisticated graphics applications. Activities included:

- Initial review of the existing CYCARE package with respect to on-going commitment to the Canadian product, system performance, technical and developmental support and outstanding requests. The outcome of this investigation will be identified in a formal report for CYCARE's response.
- Major changes to the on-line scheduling formats including restructuring existing resources and initiating new processes to better meet the demands of both the medical staff and the clinic in general.
- Chairing several Task Forces established to review current practices, identify problems and recommend solutions. These include Scheduling Task Force, Statistics Task Force and Micro-Computer Sub-committee.
- On-going audit of on-line system data against manual Registry/Site indexes previously kept by the Provincial Cancer Registry including associated data entry.
- Training additional resources to meet the heavy volume of statistical and survey requests made to this department.

MAJOR ACCOMPLISHMENTS

A higher level of quality and accuracy in the published Annual Report of the Provincial Cancer Registry with the inclusion of "age adjusted rates" and a more relevant graphic presentation of pertinent epidemiological data.

Purchase of appropriate software and implementation of a process to allow internal design, formatting and printing of reports, newsletters, surveys, forms presentations, posters, etc. using MacIntosh computer.

Implementation of IBM compatible micro-computers capable of accessing both the CYCARE system and Word Processing (through an emulation package) thus decreasing costs and increasing the usefulness of the equipment.

System generation of monthly clinic statistics previously generated manually.

Generation of preliminary demographic and diagnostic data critical to initial evaluation and preparation for the establishment of a satellite Gynecology clinic in Cape Breton.

MAJOR GOALS FOR 1989

Establish a committee to evaluate the Foundation's current and future needs with regard to a Patient Information System and computers in general and develop recommendations regarding how to proceed.

In the interim, upgrade existing hardware at least to a level to meet current response time and equipment requirements.

Initiate a Quality Assurance audit of historical data captured via the Provincial Cancer Registry and establish a comprehensive Quality Assurance process for both the Registry and the Health Records department.

If a decision is made to continue with CYCARE, initiate implementation of the following applications:

- Medical Services Reporting.
- On-line Chart Tracking.
- Linking information stored on CYCARE system to micro-computers to allow sharing and manipulation of data.

HEALTH RECORDS DEPARTMENT

PREAMBLE

The Health Records Department, continuing in its pivotal role in the Foundation, co-ordinated the clinic areas of Reception/ Scheduling, Records Office, Medical Transcription and, in its provincial scope, the Cancer Registry. Operating with a full staff complement of twenty (20), the department achieved an excellent turnaround time for departmental responsibilities, as well as consideration of refinements and new programs in line with Foundation policies and pending accreditation standards.

LAST YEAR'S ACTIVITIES

As a result of our department's broad spectrum of committee/administrative/ staff meeting involvement, with the base for departmental activities being the Health Record and Registry Committees, the following areas were addressed.

Under the Health Record Committee, with the Department Head as Chairman and the Supervisor as Department Representative and Recording Secretary, along with excellent contributors for other Foundation departments, numerous issues were initiated and co-ordinated to resolution.

Completed projects include: physician initialling of reports; consistent word processing format for progress notes; physician's order sheet (non-chemotherapy); review of retention policies for internal and external chart documents; off-site storage policies; role of department in potential or actual legal cases; filing of photographs on chart. Outstanding issues include: consent forms, signing of original progress notes on Foundation chart.

Provincial Cancer Registry Committee (see separate Registry Report)

Other committee involvements include:

- Management Advisory Committee.
- Occupational Health and Safety Committee.
- Computer Advisory Committee.

Due to space restraints, increased activity occurred in the preparation of charts on expired patients for relocation to off-site storage; as well, policies and procedures for same were reviewed and updated.

MAJOR ACCOMPLISHMENTS

The department achieved independently or in conjunction with other departments, the following:

- Under an Executive Committee Task Force, co-ordinated the development of a centralized Medical Transcription area utilizing P.C. word processing with WordPerfect software; a co-ordinator for this area was also appointed; Medical Secretaries were transferred from Health Records Department to their respective Medical Department Heads.
- Co-ordination of the scheduling and chart related activities for the Cape Breton Gynecologic Oncology Satellite Clinic at St. Rita Hospital in Sydney, Nova Scotia.
- The Provincial Cancer Registry achieved a reformatting of the Annual Incidence Report, under the auspices of the Registry Committee of which the Department Head is Secretary and the Registry Health Record Administrator is a member.
- Within the department, there was continual upgrading/ revamping of work procedures to streamline chart flow. Staff participation ensured the success of the end product.

FUTURE GOALS AND OBJECTIVES

An ever-present goal of our department is the constant monitoring of patient records to ensure the quality and quantity of documentation is at a level to assure optimum patient care and are legally acceptable.

Further departmental goals include:

- Enhanced system applications such as Medical Service Reporting, Chart Tracking and expanded Annual Letter Follow-up Program.
- Upgrading of technical procedures within our department to ensure accreditation and quality assurance standards are met.
- Facilitating ongoing chart/ computer system oriented research by providing the optimum level of quality data and planning staff time to assist in the abstraction/ presentation of data.

HEALTH RECORDS DEPARTMENT cont'd

- In conjunction with a policy for "signing of all original chart progress notes", establishment of an adequate doctor review area to facilitate this procedure is planned.
- To have plans in place to address concerns regarding inadequate filing space within the department and determine the most cost effective solution.

SIGNIFICANT WORK RELATED ACHIEVEMENTS AND STAFF DEVELOPMENT

Medical Transcription staff received necessary word processing training. Staff attended visiting guest lecture presentations; Department Head and Supervisor attended appropriate seminars during the year. Open communication was encouraged among all areas of our department to ensure ongoing development.

WORKLOAD STATISTICAL INFORMATION
Monthly Averages - 1987/88
Health Record Department

Number of charts handled	4,100/mo.
Number of reports filed	1,400/mo.
Charts updated with death information	150/mo.
Compliance rate for returned follow-up letters	90%
Chart related lines transcribed	49,000/mo.
Number of patients interviewed	90/mo.
Number of return appointments booked	1,380/mo.
Patients reporting to Reception Desk	1,200/mo.

MEDICAL ONCOLOGY DEPARTMENT

The major issue facing the Department in the near term is that of manpower. The Department has been without a head since the departure of Dr. White in June of 1987. Drs. Wierzbicki and Vandenberg will have left the Foundation as of November 1988. The Department is currently actively recruiting both for Medical Oncologists and Head of Medical Oncology. Until these manpower issues can be resolved, further development of the Department cannot occur to any significant extent.

SERVICE

In order to continue providing appropriate sub-specialty services, two clinical assistants have been hired. There still does not exist funding approval for these positions, which are currently being funded from vacant Medical Oncology positions. Unfortunately, Nova Scotia continues to have a shortage of Medical Oncologists when compared with other regions of the country.

With the change in University departmental status to Hematology/Oncology, under the Department of Medicine from the previous status under Radiation Oncology, the issue of beds becomes increasingly important. It is hoped that the host Victoria General Hospital will recognize the importance of providing adequate beds, not only for the care of Oncology patients, but also in order to attract sufficient Medical Oncologists to the province.

The Department continues to appreciate the excellent collaboration of committed physicians outside of the Halifax Metro area involved in the care of patients with cancer in the Province of Nova Scotia.

Further development of service within the Foundation depends on the continued cooperation of nursing staff, as well as the development of multi-disciplinary, site oriented clinics, under the supervision of a Clinic Director.

The Department strongly supports the funding of not only intravenous chemotherapy, but all cancer treatment related drug costs for residents of Nova Scotia.

RESEARCH

Although the University has recently been able to receive funds from the NCIC to support four basic cancer researchers, the Foundation itself is not involved in any basic research. It is hoped that clinicians and basic scientists in the Foundation and the University will be in the future able to work closely together.

Clinical research is performed with the aid of the excellent staff in the Clinical Trials Unit. Dr. Wierzbicki has continued as a member of the Investigational New Drug Committee, the Lung Cancer Committee and Sarcoma Committee of the National Cancer Institute of Canada (NCIC), as well as chairman of the Phase II Tumour Necrosis Factor Study in renal cell cancer, which is currently nearing completion. He has also been heavily involved in the design of the proposed Phase III Small Cell Lung Cancer Study, assessing maintenance with Interferon. Dr. MacCormick remains a member of the Gastrointestinal Malignancies Committee and Quality of Life Committee of the NCIC. He has also been involved in active and innovating clinical research that will probably result in several new studies involving gastrointestinal malignancies and carcinoma of unknown primary. Increasing cooperation with the Hematologists will hopefully lead to an increased committment to clinical research in multiple myeloma and lymphoma. Dr. T. Vandenberg has served on the Breast Committee and Lymphoma Committee of the NCIC.

Research aided by the pharmaceutical industry continues. Dr. Vandenberg has negotiated support for a study assessing the effect of Interferon and Tamoxifen in patients with breast cancer. Other proposed research will involve the use of GM-CSF in the treatment of lymphomas.

EDUCATION

The Department has been involved in education at the following levels:

- Undergraduate lectures in Pharmacology and Therapeutics.
- Monthly seminars to Internal Medicine Residents.
- Presentations at Hematology/Oncology Rounds.
- Continuing medical education throughout Nova Scotia to discuss topical issues in the care of cancer patients.
- The Department has brought in several guest speakers to discuss topics ranging from biological response modifiers, treatment of A.I.D.S. related malignancies, and psychosocial issues relating to the care of people with cancer.

MEDICAL ONCOLOGY DEPARTMENT cont'd

FUTURE

Obviously the future of the Department depends entirely on the ability of the Foundation to recruit skilled and dedicated Medical Oncologists. This rests on the ability to be financially competitive with other provinces, as well as creating an appropriate environment whereby clinical research can be done. As Medical Oncology is a relatively new sub-specialty, this requires a recognition of the special role that this group can play in the province, particularly when working within the multi disciplinary care setting. If one can provide fertile ground for the development of all three legs of the stool (service, research and education), then Medical Oncology will be able to fulfill its responsibilities to the province.

MEDICAL PHYSICS DEPARTMENT

ACTIVITIES

The major problems with the Therac-25 linear accelerator were corrected at the beginning of the fiscal year and the operation of this treatment machine is back to normal. For the 6 MVp linear accelerator, an intensive preventative maintenance programme has been initiated to avoid downtime. The majority of this work has been done outside of the normal patient treatment hours. The radiotherapy simulator also has required major renovations as the system is now eleven years old. Approximately half a working day per week has been necessary for maintenance work on each of these machines.

In the cobalt-60 treatment rooms, door interlocks have been installed to prevent the possibility of accidental irradiation of personnel. New localization lasers which project a cross onto the patient are being installed in each room.

The increase in treatment planning workload of last year has been maintained and in some cases increased. The number of simulations is similar to 1986/87 which was a 25% increase over the previous year. Over the last year treatment plans have increased by 15%, casts by 66%, shields by 50% and compensators by 400%. Cesium insertions have stayed the same but gold seed implants have increased by 20%. The treatment planning computer is scheduled to be upgraded in the next fiscal year and the simulator the following year.

There were a number of staff changes during this year. Brian MacParland and F.S. Chen went to other clinics in Victoria and Saint John respectively, while Mike Hale and Jeff Berry started with us. George Matthews who had been with us since the start of CTRF, left us and John Berkey joined the staff. Although it is sad to lose employees, we wish them well in their future work and look forward to fruitful cooperation with our new staff.

The major development project during this year was the construction of a system for producing compensators in a reasonable time. The welcome increase in the use of compensators (especially for mantle fields) meant long waiting times for patients. The new system, which uses a computer to digitize the video picture of a fan light beam projection onto the patient surface, can provide the data to construct any compensator in about half an hour.

We were pleased to have students from Dalhousie Physics Department and TUNS Engineering Physics and Electrical Engineering work with us on these projects during this year. We would like to congratulate Narayan Kulkarni on passing the American Board of Radiology exams in Therapeutic and Nuclear Medicine Physics, and Stuart Jackson on promotion to senior physicist. At the provincial and national level, John Andrew is a member of the Provincial Radiation Health Advisory Committee and John Aldrich is on the Advisory Committee on Radiological Protection of the Atomic Energy Control Board.

Grants for research were received from the Medical Research Council of Canada - $24,000 for the year 1987/88 for research on dosimetry using dental enamel, $10,000 is from CTRF of NS and $5,000 from Dalhousie University Medical Research Foundation for the development of non-invasive surface contour measurement systems.

NURSING DEPARTMENT

During 1987/88, the efforts of the Nursing Department have continued to focus on evaluation of the current delivery system of nursing care.

As a result of the previous year's three month trial period for Primary Nursing, the appropriateness of this method of delivery of nursing care for specific areas within the Nursing Department is clearly evident. With this direction in mind, efforts have focussed on obtaining funding to initiate the Primary Nursing Model within Radiotherapy Nursing on a permanent basis.

If funding is provided, this method will impact dramatically on many aspects of nursing care. It will lay the ground work for demonstrated accountability of nursing staff; standardization of patient assessments; coordination of nursing care with other health professionals within as well as outside the organization; more efficient, effective utilization of nursing resources and standardization of patient educational information. All of these factors combined will serve to assist in the development of strategies aimed at addressing the diverse needs of our patient population.

ACCOMPLISHMENTS

- Refurbishing of Clinic Area: recent physical changes to the main waiting and traffic areas as well as the Chemotherapy Treatment Room are further evidence of the continuing efforts of the nursing staff to create a warm, relaxing atmosphere for our patients.
- Policy/Procedure Committee: since its conception in June 1986, this Committee has been totally dedicated to the achievement of it's immense two year objective. By July 1988, it is anticipated that documented standards of nursing practice within the Cancer Treatment and Research Foundation in the form of policies and procedures will be completed. At that time the mandate of the Committee will be structured toward identification of the need for procedural changes and the maintenance of annual updates.
- Patient Education: nursing staff have identified the need for a video to be produced for patient educational purposes. The key objective would be to provide patients with basic information to help alleviate anxiety through familiarization with the facility, staff and general expectations of clinic visits. Administrative support has made this a reality and all departments within the Foundation are contributing immense effort and support into the completion of this project by June 1988.
- Staff Development: monthly staff inservices have continued throughout the year and funding has been provided for the following conferences:
- 3rd Psychosocial Oncology Conference - May 1987 attended by 2 staff nurses;
- R.N.A.N.S. Conference, June 1987, attended by 1 staff nurse and 1 management staff;
- C.A.N.O. Conference, October 1987, attended by 1 management staff.

OBJECTIVES 1988 - 1989

1. Development of Nursing Department Philosophy/ Objectives (contingent upon completion of Foundation Philosophy and Objectives - December 1988).
2. Implementation of Primary Nursing Model within Radiotherapy Nursing (contingent upon funding).
3. Development of Radiotherapy Nurse Coordinator Role (contingent upon funding).
4. Standardization of Patient Education Information.
5. Promotion of Staff Education through:
   - updating of library resources
   - increased conference attendance
   - identification/ presentation of inservices required
   - development of orientation package for new nursing staff.

RADIATION ONCOLOGY DEPARTMENT

MEMBERSHIP CHANGES

Radiation Oncology has continued to be very active during the year. One thousand three hundred thirteen (1,313) new patients were seen and there was an average of 79 patients on treatment each day.

Regretfully, Dr. Beng Hoey Jo resigned from the Foundation effective April 29, 1988. We have verified that he is now active in Regina. Dr. Kishor Singapuri also resigned with effect on June 3, 1988. He has obtained an appointment in Hershey, Pennsylvania. We wish both of these doctors every success in the future.

We are happy that Dr. Paul Joseph has joined us. He is proving to be a very effective member of our Department.

There is an ongoing search for additional staff members and for a new Medical Director of the Department. Responses have been received for both of these searches.

DEPARTMENT OPERATION

An improved planning system for multifield radiation treatments became operative during the year and is proving an advantage in patient management.

Radiation therapy machines continue to run with reliability. The 25 MeV linear accelerator is very reliable with its new control system. 6 MeV equipment continues to work well. The need for increased regular maintenance in the future is foreseen. Cobalt units are old but continue to be reliable. At least one will require replacement within the near future as will the simulator.

The professional and technical staff have continued to work with care and dedication. Numerous compliments are received from the patients, particularly regarding the Radiation Technologists.

RESEARCH

Extensive involvement with clinical research protocols continues both independently and in conjunction with Surgical and Gynecological Departments. Clinical investigation in conjunction with the Medical Oncology at the Issac Walton Killam Hospital for Children has continued under the care of Dr. O.S. Wong.

Research into non-invasive thermometry for use with hyperthermia continues with encouraging progress. Hyperthermia trials continue to demonstrate a significant place in the control of certain malignancies which are not responsive to other methods of treatment.

FUTURE OBJECTIVES

1. Maintenance of the existing high standard of patient care.
2. Adoption of improvements in radiation treatment including stereotactic radiotherapy where treatment is tailored under computer control to conform with irregular tumour volumes. Further developments in brachytherapy (the use of implanted or other locally applied radioactive sources) is considered to be important.
3. There is expectation that further developments in hyperthermia including clinical use of non-invasive thermometry and a combination of hyperthermia with radiation therapy will become possible within the near future.

SCHOOL OF RADIATION THERAPY

The training program for Radiation Therapy Technologists is 24 months, commencing in September of each year. During the two years, the student receives theoretical and practical instruction under the supervision of qualified staff.

The theoretical training involves 24 weeks of lectures at the Princess Margaret Hospital, Toronto. The clinical training plus supplementary didactic sessions are received at the Halifax Clinic.

In April 1987, Mrs. Garrison attended a two day Annual Liaison Committee Meeting (Ontario Cancer Foundation and Affiliate Clinics) at the Princess Margaret Hospital which affords the opportunity for the relevant exchange of ideas on training. Prior to this meeting, Mrs. Garrison attended a one day workshop entitled "How Attitudes Influence Performance and Productivity".

In May 1987, Carol-Anne Jennex and Helen Phalen attended the Spring N.S.S.M.R.T. Annual General Meeting held in Halifax. In September 1987, Carol-Anne Jennex and Helen Phalen graduated from the training program, successfully completed the C.A.M.R.T. certification examinations and joined the team of staff technologists at the C.T.R.F. of N.S.

The student selection process began in January with the screening of 86 applications of which 35 were requested to come for a personal interview. The three students exhibiting the greatest potential for success were accepted into the September 1988 training program.

The senior students rotated to the Radiology, Nuclear Medicine and Cytotechnology Departments of the Victoria General Hospital to observe the procedures used in other disciplines. The students from these departments also spent a day observing the technical procedures at the Halifax Clinic.

In March 1988, the senior students attended a two day Radiation Protection Seminar at the Technical University of Nova Scotia.

Continuing Education seminars within the Cancer Foundation such as:

- Medical Physics seminars
- Physics/Technologist meetings
- Nursing seminars
- Special lecture presentations

continue to be very beneficial to students and staff of the training program.

SURGICAL ONCOLOGY AND MEDICAL SPECIALTIES DEPARTMENT

The Department of Surgical Oncology and Medical Specialties (SOMS) is comprised of five divisions: Surgical Oncology, Otolaryngology, Medicine, Urology and Gynecologic Oncology.

This Department, while representing the largest number of physicians functioning under the auspices of the Cancer Treatment and Research Foundation is also the youngest department in the Foundation. First formed officially in 1986 it became increasingly active in 1987. Six meetings were held during this year, including two special meetings: one at the request of Dr. Emerson Moffitt, Clinical Director; and the second with a special invitation to Dr. R. Wierzbicki, at that time Acting Head, Department of Medical Oncology. This meeting was held to discuss the overall program pertaining to chemotherapy which overlaps both departments.

The Department of Surgical Oncology and Medical Specialties developed a job description/-terms of reference for the Head of this department which was submitted and approved through the Executive Director by the Foundation's Board.

This Department participated in the discussions concerning the development of Otolaryngology under the auspices of the Foundation with its location primarily at the Halifax Infirmary. Discussions in this area not only centered upon the establishment of this Division's main function being at the Halifax Infirmary rather than within the walls of the Foundation, but also in the development of a mutually agreed upon letterhead to clearly establish the association between that Division, the Foundation and the Halifax Infirmary. Included in the development plan was the establishment of a multi-disciplinary case review, particularly of newly identified cases, to be carried out within the location of the Cancer Treatment and Research Foundation at routine intervals.

This Department continues to play an active role within the organization and looks forward to the continued development of the Cancer Treatment and Research Foundation of Nova Scotia in the years to come.

GYNECOLOGIC ONCOLOGY DIVISION

The Division of Gynecologic Oncology of the Foundation continues to have a very busy year functioning, as in the past, in the multi-disciplinary mode.

Three meetings were held during the past year with members of the Division and this resulted in a re-editing of the manual "Treatment Protocols for Gynecologic Malignancies". This was the first update since its original production in the mid 1970's.

ANNUAL REPORT STATISTICS
(1987 - 88)

No. of Patients Seen		1,230
Return Visits		2,065
Disposition Visits (Total)		
New	158	
Return	434	592
TOTAL VISITS		**2,657**

TOTAL PATIENTS BY SITE

Uterus (NOS)	3
Cervix Uteri (Includes In-Situ)	528
Placenta	0
Corpus Uteri	385
Ovary/Fallopian/Lig	227
Female Gen (NOS)	65
Malignancy - other sites	12
Benign	10
TOTAL	**1,230**

Clinical Trials continue to play an important part in our function and the Division is involved in the National Cancer Institute's "Ovarian Clinical Trials Study" and with several other trials in conjunction with Dr. Ron MacCormick and the Department of Medical Oncology concerning recurrent cancer of the cervix and failed therapy for cancer of the ovary. Patients continue to be accrued in all of these.

Members of the Division reported their findings concerning "Peritoneal Cytology in Gynecologic Oncology" at the annual meeting of the Gynecologic Oncology Society of Canada; the paper being presented by Dr. Robert Grimshaw, a Resident in the Department of Obstetrics and Gynecology, being supervised by Dr. John Jeffrey. The Division is pleased to welcome its third fellow - Dr. Abboud Abdo, from Sherbrooke, Quebec, in the first of a two-year Fellowship in Gynecologic Oncology. During Dr. Abdo's first year he spent two months in the Department of Radiation Oncology of the Cancer Treatment and Research Foundation and during his second year will spend three months in the Department of Hematology/Medical Oncology. The remainder of his time (19) months is spent within the Department of Obstetrics and Gynecology and its Division of Gynecologic Oncology.

Another highlight of the year has been the continued expansion of the Follow-Up Clinic for Gynecologic Oncology survivors (patients) located at St. Rita Hospital in Cape Breton. This clinic is held four times a year. The need was initially projected (under very definite guidelines) of approximately 35 patients each clinic; now we see an average of 70 patients at each clinic or 280 visits are occurring.

The Division is continuing to explore the feasibility of a second satellite (outreach) Follow-Up Clinic within the province and an announcement concerning this should be forthcoming within the next eighteen months.

Several very prominent Gynecologic Oncologists visited us during the year. Dr. Peter Swartz, Head of the Gynecologic Oncology Division at Yale, spent three days in the Department as well as Dr. Steven Piver, Head of the Division of Gynecologic Oncology at Roswell Park in Buffalo, New York.

Members of the Division attended various academic pursuits during the year including the Annual Meeting of the Gynecologic Oncology Society of Canada, the International Society of Gynecologic Oncologists, the Felix Rutledge Society of Gynecologic Oncologists, the Atlantic Society of Obstetricians and Gynecologists, the Society of Obstetricians and Gynecologists of Canada, the Canadian Oncology Society and the Canadian Society of Radiation Oncologists. Recently, the Canadian Society of Medical Oncologists was formed. I feel the Division is well represented in all of these organizations so important to the continuing development and progress of Oncology care in this country.

The Division extends its sincere appreciation to the entire staff of the Foundation, located at the Halifax Clinic and the Cape Breton Clinics at St. Rita Hospital.

The Division of Gynecologic Oncology is very excited at the recent announcement by the Royal College of Physicians and Surgeons of Canada that the sub-specialty of Gynecologic Oncology within the jurisdiction of the specialty of Obstetrics and Gynecology has been accepted and will become a part of the pilot project of Accreditation without Certification. This Division, currently in association with the Department of Obstetrics and Gynecology at Dalhousie, is studying the feasibility of making formal application to the Royal College for consideration of a training program in Gynecologic Oncology being developed here at Dalhousie.

OTOLARYNGOLOGY DIVISION

The Otolaryngology - Head and Neck Cancer Patients Follow-up Clinic was physically relocated at the Halifax Infirmary in April of 1988. Drs. Attia and Wong are covering this area and since relocation, have involved other disciplines in this routine Follow-up Clinic. The Clinic is held on Monday mornings and an average of seventy-three patients are seen every month. There are 3 to 5 new patients seen each month. The Social Worker and Speech Pathologist are present to assist patients with their special needs and nursing is in the process of developing a nursing assessment tool specifically addressed to this unique population.

On October 17, 1988 the first Multidisciplinary Rounds were held at the Halifax Infirmary. These are held every two weeks on a Monday from 1:00 to 2:00 p.m. with a goal to improve the total management of this patient population. Included in those who are attending on a regular basis are Head and Neck Surgeons, Medical Oncologist, Pathologist, Oncology Nurses, Speech Pathologist, Otolaryngology Nurses, Radiation Oncologist, Palliative Care Physician, Imaging Radiologist, Nurtitionist, Physiotherapist as well as the Otolaryngology Residents. The response to this method of patient care has been positive and it is expected this conference will develop as an important process in evaluating and managing patients with multiple needs.

SKIN NEOPLASM CLINIC

The Skin Neoplasm Clinics have continued once weekly throughout the year attended alternately by Drs. J. Klotz and J. B. Ross with the exception of absences, out of town, vacation, etc. The Dermatology Residents have continued to attend the Clinics for educational purposes. There has been an increased number of requests from core residents and elective students rotating through the Dermatology Department at the Victoria General Hospital to attend the Clinic. On occasion, this has been accepted but the Clinic area remains so congested in the present layout that it has caused difficulties.

Dr. J. B. Ross has functioned on the Medical Executive representing the interests of the Department of Medicine as well as Dermatology. Dr. Klotz has continued her work as Clinical Co-Ordinator for Dermatology.

Discussions have continued with the Statistics Section throughout the year on the requirements for an Annual Report and also to give some direction for future research.

Dr. J. B. Ross went on sabbatical leave for six months from April 1, 1988.

The Interdisciplinary Association with surgery has continued with Dr. Steve Norvell who works side by side with the dermatologists in the weekly Clinic. Dr. Doug Thomson has acted as Chief Radiotherapy Consultant in an interdisciplinary capacity.

Statistics from April 1, 1987 to March 31, 1988:

New Patient Visits	66
Reassessments	14
Return Visits	283
TOTAL PATIENT VISITS	363

TECHNICAL DEPARTMENT

The administration of radiation for the treatment of cancer is the devoted role of the technologist. This delivery requires precision, accuracy and exact duplication throughout the prescribed course of therapy. However, as an integral part of the medical team, the technologists' role also demands a comprehensive holistic approach for patients and their families. The involvement with the patient during his/her therapy forms a relationship permitting the technologist to assess and observe. The vital information obtained is communicated to the nurse and medical staff which enhances the holistic approach to patient care.

PROJECTS

The upgrading and assessments in the Technical Department as well as the impact from other areas has initiated involvement in:

- Revision of the quality assurance daily requirements of the radiation units.
- Re-evaluation of the consent forms.
- Development of policies and procedures specific to the technical area.
- Music and decor were added to the T6 treatment room to assist in reducing the anxiety experienced during therapy sessions.
- The establishment of consistent scheduled bookings for patients, treatments and reviews.
- The Clinic patient escort service responsibilities have been directed to the Technical Department. This re-direction will permit development of patient care aspects.

ACCOMPLISHMENTS

Computerization of Patient Scheduling - The identification of a complete physician daily schedule lead to the computerization of therapy lists for weekly assessment and completion of patients. In this way, staff and physicians were presented with an incorporated current daily patient status for any given day.

COMMUNICATION

Lectures given to the Nova Scotia Society of Radiation Technologists, Cope with Cancer and the various inservices attended has led to the exchange of ideas and the impact of positive communication. Arising from this tool of communication, an awareness of radiation treatments and/or procedures have been highlighted throughout the year.

FUTURE OBJECTIVES

Though the department can never dedicate enough energy and assistance towards improvement of patient care, our aims for 1988 will be:

- Improvement of radiation therapy chart documentation.
- Maintain and continue effective ongoing communication within the Foundation and other institutions.
- Encourage feedback regarding policies and procedures and assist in identification of problems relating to patient care.

STAFF DEVELOPMENTS

During 1987 a spectrum of topics have been offered to staff in conjunction with the Nursing and Medical Physics Departments - infectious disease, nutrition, patient services, hospice, electron therapy, breast treatment techniques, prostate cancer, computerization of calculation read outs.

Various conferences, courses and union seminars were attended by the staff.

STATISTICAL INFORMATION

Total patients commencing therapy	1,794
Total patient visits	19,728
Total treatment fields	42,846
Electron therapy patient visits	617
Cobalt therapy patient visits	9,443
Linear Accelerator visits	9,216
X-ray unit visits	452
Status at Time of Treatment:	
(a) Hospitalized Patient	1,054
(b) Outpatient	740
Patients Commencing Therapy:	
(a) New	1,313
(b) Return	481

PUBLICATIONS

1. ALDRICH, J.D., PASS, B. Monitoring of Radiation Effects Using Dental Enamel. Dalhousie University Alumni Journal 14, May 16-18, 1987.
2. ANDREW, J.W., McPARLAND, B.J. An Automated System for the Production of Bolus for Electron Beam Treatments. Proceedings of the Ninth International Conference on the Use of Computers in Radiotherapy. Elsevier Science Publishers, Amsterdam, p 315-318, 1987.
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4. ALDRICH, J.E. The Therac-25 Linear Accelerator - A Cautionary Tale. HPA Bulletin, September 1987.
5. ALDRICH, J.E., PASS, B. Determination of the Radiation Exposure from Nuclear Accidents and Atomic Tests Using Dental Enamel. Health Physics, 54, p 469-471, 1988.
6. ALDRICH, J.E. Development of a Hospital Radiation Emergency Protocol. J. Canadian Association of Radiology, Vol 39, p 137-139, June 1988.
7. ANDREW, J.W., ALDRICH, J.E. Comments on Dosimetric Aspects of a Rotating Beam Splitter Used in Tangential Field Breast Treatment. Medical Physics, 15, p 420-421, 1988.
8. ALDRICH, J.E., PASS, B. Comments on EST Dosimetry for Atomic Bomb Survisors and Radiologic Technologists. Submitted to Nuclear Instruments and Methods in Physics Research, 1988.
9. ALDRICH, J.E., BERKEY, J. Access Control Systems for Radiotherapy Treatment Rooms. To be published in Medical Physics, 1988.
10. JACKSON, S.A., NICKERSON, R., BROWN, N. Great-Ex-SPECT-ations: A Survey of Canadian ECT Facilities. Accepted for publication, Can. J. Nuclear Med. Technology, 1988.

PRESENTATIONS

1. ANDREW, J.W., McPARLAND, B.J. An Automatic System for the Production of Bolus for Electron Beam Treatments. Ninth International Conference on the Use of Computers in Radiation Therapy, Scheveningen, The Netherlands, June 1987.
2. PRECIOUS, D.S., JACKSON, S.A., HOFFMAN, D., MacKENNA, D. Measuring Blood Flow in Oral Tissues. 13th Canadian Medical and Bilogical Engineering Conference, Halifax, Nova Scotia, June 1987.
3. ALDRICH, J.E. A New Dosimetry Technique Using Dental Enamel. Ontario Hydro Symposium, Toronto, June 17, 1987.
4. PRECIOUS, D.S., JACKSON, S.A., HOFFMAN, D., MacKENNA, D. Measuring Blood Flow in Oral Tissues. American Association of Oral and Maxillo Facial Surgeons, Anaheim, California, September 1987.
5. JACKSON, S.A. Instrumentation for Radiation Measurements. Radiation Protection Seminar, Technical University of Nova Scotia, Halifax, March 30-31, 1988.
6. DANIELS, C. Diagnostic Radiology. Radiation Protection Seminar, Technical University of Nova Scotia, Halifax, March 30-31, 1988.
7. ALDRICH, J.E. "Medical Applications". Radiation Protection Seminar, Technical University of Nova Scotia, Halifax, March 30-31, 1988.
8. ALDRICH, J.E. "Food Preservation". Radiation Protection Seminar, Technical University of Nova Scotia, Halifax, March 30-31, 1988.

ANNUAL REPORT

PROVINCIAL CANCER REGISTRY

January 1, 1987 to December 31, 1987

1987 CANCER INCIDENCE REPORT

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PROVINCIAL CANCER REGISTRY REPORT

In last year's 1986 report, a concerted effort was made to improve the quality of the information conveyed by the report, with the inclusion of age adjusted rates. Trends in these age adjusted rates over time or difference between areas are more likely to represent changes in exposure to causal factors than would unadjusted rates.

Important changes have been made again this year with two, sometimes conflicting, goals in mind: improving the quality and presentation of the information and yet still maintaining the comparability of this report to previous publications. Comparability is important since it facilitates evaluation of cancer trends over time.

The most important change this year involves the separation of insitu (localized) cancers and non-melanoma skin cancers from other cancers. There are three (3) main reasons for this:

1. These cancers are relatively unimportant in terms of causing serious illness and death; thus their inclusion might over-state the cancer burden of Nova Scotia.
2. Their reporting is often inaccurate or inconsistent, thus might result in unreliable and misleading statistics.
3. Since many other provinces remove these cancers, our omission of them will aid provincial comparisons.

These cancers have been excluded from the page entitled "Primary Sites With Age Groupings - Male and Female" and the associated calculations. They have been listed instead, separately on a new page entitled "Cases of Insitu and Skin Carcinomas for 1987". Comparing these age adjusted rates to the corresponding ones from the 1986 report will be affected only marginally since, for most cancers, the insitu cases constituted only a tiny fraction of the caseload. Similarly these cancers have been excluded from the table showing "Incidence of Cancer Within Age Groups". Since the age adjusted rates shown on these pages would not be comparable to the corresponding rates last year, the age adjusted rates, including all cancer, also appears on this page.

The maps of Nova Scotia indicating "Reported Cases by County" are identical this year, but are supplemented by two (2) maps where insitu and skin cancers are excluded.

Age adjusted rates have not been calculated for some of the rare cancers because the small number of cases in some age groups would result in such rates being unreliable and potentially misleading. In all age adjusted calculations (except for the Total Incidence - Male and Female) the 80-90 and 90+ age groups have been combined. It should be noted that the 1986 Nova Scotia population figures were not available at the time of printing. This substitution should not affect the results significantly since there are generally very small population shifts in such a short time period.

Any queries you may have regarding the 1987 Cancer Registry Incidence Report are welcome and may be directed through Thelma Croucher, Co-Ordinator, Provincial Cancer Registry (428-4255).

PRIMARY SITES BY AGE GROUPING - MALES (1987)

(EXCLUDING NON-MELANOMA SKIN & INSITU)

SITE	ICD-O CODE	AGE BREAKDOWN											TOTAL	INCID. PER 100,000	AGE ADJUSTED RATE **
		0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+	NOT AVAL			
Lip	140					2	4	6	5	2	1		20	4.67	4.38
Tongue	141					1	5	3	1				10	2.33	2.37
Mouth Other	142-145						4	8	2	1			15	3.50	
Pharynx;Tonsil	146-149						2	3	3	1			9	2.10	
Esophagus	150					2	3	7	7	1			20	4.67	
Stomach	151					4	11	19	31	8			73	17.04	15.37
Small Bowel	152			1				1	1				3	0.70	
Colon - Rectum	153-154			1	5	16	41	94	92	38	12		299	69.80	63.97
Liver; Gallbladder	155-156				1	1	3	8	6	3	1		23	5.37	
Pancreas	157				1	3	7	17	19	4			51	11.91	10.80
Peritoneum	158-159						2	3		2			7	1.63	
Nasal Cavities	160						1	1					2	0.47	
Larynx	161					2	17	19	9	1	1		49	11.44	11.12
Lung; Pleura	162-163		1		4	14	52	149	132	42	3		397	92.68	84.41
Mediastinum	164			1									1	0.23	
Bone Marrow	169	2	1		9	1	8	18	17	7	1		64	14.94	13.84
Bone; Soft Tissue	170-171		2	3	3	3	1	2	5	2			21	4.90	
Skin - Melanoma	173		1	2	14	7	6	7	8	2	1		48	11.21	10.65
Breast	175					1			1	1			3	0.70	
Prostate	185			1	1	2	24	90	139	73	5	1	336	78.44	69.36
Testis	186		2	7	4	4	2	1					20	4.67	
Penis	187				1	2	2		2	1	1		9	2.10	
Bladder	188			1	5	1	19	39	58	20	1		144	33.62	30.28
Kidney; Ureter	189			1	2	3	15	17	13	2	1	1	55	12.84	12.02
Eye; Lacrimal Gland	190						1	1	2	1			5	1.17	
Brain; Nervous System	191-192	2	2	1	1	4	10	9	8	1			38	8.87	8.61
Endocrine	193-194			2	1	2	4	1	1				11	2.57	
Lymph Nodes	196	1		2	6	6	9	14	17	4	1		60	14.01	13.02
Unknown Primary	199				1	5	9	26	9	11	1		62	14.47	
TOTAL		5	9	23	59	86	262	563	588	228	30	2	1855		

** AGE ADJUSTED RATES NOT CALCULATED FOR RARE CANCER SITES
(STANDARDIZED TO 1981 CANADIAN POPULATION)

PROVINCIAL CANCER REGISTRY OF NOVA SCOTIA

PRIMARY SITES BY AGE GROUPING - FEMALE (1987)

(EXCLUDING NON-MELANOMA SKIN & INSITU)

SITE	ICD-O CODE	AGE BREAKDOWN 0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+	NOT AVAL	TOTAL	INCID. PER 100,000	AGE ADJUSTED RATE **
Lip	140							1	2				3	0.68	
Tongue	141							1	2				3	0.68	
Mouth Other	142-145				2		1	2	5	3			13	2.95	
Pharynx;Tonsil	146-149					2	1	2	1		1		7	1.59	
Esophagus	150					1	1	5	1	1			9	2.04	
Stomach	151					4	6	13	7	10	5		45	10.21	9.53
Small Bowel	152					1	2	3	2	1			9	2.04	
Colon - Rectum	153-154				1	16	29	72	91	53	12		274	62.19	56.42
Liver; Gallbladder	155-156				1	2	5	1	8	6	1		24	5.45	
Pancreas	157				2	1	3	13	14	13	2		48	10.90	9.82
Perltoneum	158-159					2		2	1	2			7	1.59	
Nasal Cavities	160								1	1			2	0.45	
Larynx	161					1	2		1				4	0.91	
Lung; Pleura	162-163			1		11	34	47	53	20	2		168	38.13	35.48
Mediastinum	164								1				1	0.23	
Bone Marrow	169	2	1	2	2	2	6	8	15	13	2		53	12.03	11.12
Bone; Soft Tissue	170-171			3	2	3		1		3			12	2.72	
Skin - Melanoma	173			6	9	7	11	3	8	1	3		48	10.90	10.59
Breast	174			1	26	62	83	96	90	52	7		417	94.65	89.47
Cervix Uteri	180		4		8	7	7	8	8	3		1	46	10.44	9.80
Corpus Uteri	182			1		6	22	33	18	8	1		89	20.20	19.25
Ovary; Fallopian Tube	183			1	4	5	13	20	23	4	1		71	16.12	14.96
Other Female Genital	184				1		3	6	9	5			24	5.45	
Bladder	188					1	6	6	11	12			36	8.17	7.52
Kidney; Ureter	189	1				5	9	10	12	4	1		42	9.53	8.97
Eye; Lacrimal Gland	190						1		1				2	0.45	
Brain; Nervous System	191-192			1	4	3	4	7	6	3			28	6.36	5.95
Endocrine	193-194		1	2	4	5	4	1	3	1			21	4.77	
Lymph Nodes	196		1	8	4	4	9	9	15	7	1		58	13.17	12.44
Unknown Primary	199				1	2	7	21	21	22	3		77	17.48	
TOTAL		3	7	26	71	153	269	391	430	248	42	1	1641		

** AGE ADJUSTED RATES NOT CALCULATED FOR RARE CANCER SITES
(STANDARDIZED TO 1981 CANADIAN POPULATION)

PROVINCIAL CANCER REGISTRY OF NOVA SCOTIA

CASES OF NON-MELANOMA SKIN & INSITU CARCINOMAS FOR 1987

MALES

SITE	ICD-O CODE	AGE BREAKDOWN 0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+	NOT AVAL	TOTAL
Stomach	151								1				1
Colon-Rectum	153-154							2	1				3
Larynx	161							1		1			2
Lung; Pleura	162-163							1					1
Skin - Non Melanoma	173			2	26	71	120	205	216	90	22	15	767
Melanoma Insitu					1		2	2	2	1	1		9
Penis	187			1						1			2
Eye; Lacrimal Gland	190									1			1
TOTAL				3	27	71	122	211	220	94	23	15	786

FEMALES

SITE	ICD-O CODE	AGE BREAKDOWN 0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+	NOT AVAL	TOTAL
Mouth - Other	142-145					1							1
Stomach	151							1					1
Colon - Rectum	153-154							3	1				4
Larynx	161						1						1
Skin - Non Melanoma	173		1	8	29	51	76	144	174	89	24	18	614
Melanoma Insitu				1	1		1	1	2				6
Breast	174				1	2	3	1	4	1			12
Cervix Uteri Insitu	180		3	84	70	18	5	2	2			1	185
Corpus Uteri	182					2	1	1					4
Other Female Genital	184			2	9		1	3	1				16
TOTAL			4	95	110	74	88	156	184	90	24	19	844

INCIDENCE OF CANCER WITHIN AGE GROUPS

(MALES)

AGE BREAK DOWN	1987	
	ACTUAL # OF CASES	INCIDENCE PER 1000
0 - 9 YEARS	5	.0786
10 - 19 YEARS	9	.1269
20 - 29 YEARS	23	.2861
30 - 39 YEARS	59	.8621
40 - 49 YEARS	86	1.792
50 - 59 YEARS	262	6.950
60 - 69 YEARS	563	17.30
70 - 79 YEARS	588	28.33
80 - 89 YEARS	228	38.82
90+ YEARS	30	197.4
AGE UNAVAILABLE	2	
TOTAL	1855	4.33
AGE ADJUSTED RATES		4.17 *
		6.01 **

* Excludes Non-Melanoma Skin & Insitu Cancers
**Includes all Cancers

(Both Standardized to 1981 Canadian Population)

PROVINCIAL CANCER REGISTRY OF NOVA SCOTIA

INCIDENCE OF CANCER WITHIN AGE GROUPS

(FEMALES)

AGE BREAK DOWN	1987	
	ACTUAL # OF CASES	INCIDENCE PER 1000
0 - 9 YEARS	3	.0489
10 - 19 YEARS	7	.1045
20 - 29 YEARS	26	.3276
30 - 39 YEARS	71	1.015
40 - 49 YEARS	153	3.215
50 - 59 YEARS	269	6.846
60 - 69 YEARS	391	10.33
70 - 79 YEARS	430	16.09
80 - 89 YEARS	248	22.67
90+ YEARS	42	78.36
AGE UNAVAILABLE	1	
TOTAL	1641	3.72
AGE ADJUSTED RATES		3.60 *
		5.45 **

* Excludes Non-Melanoma Skin & Insitu Cancers
**Includes all Cancers

(Both Standardized to 1981 Canadian Population)

POPULATION TABLES BY AGE GROUPINGS

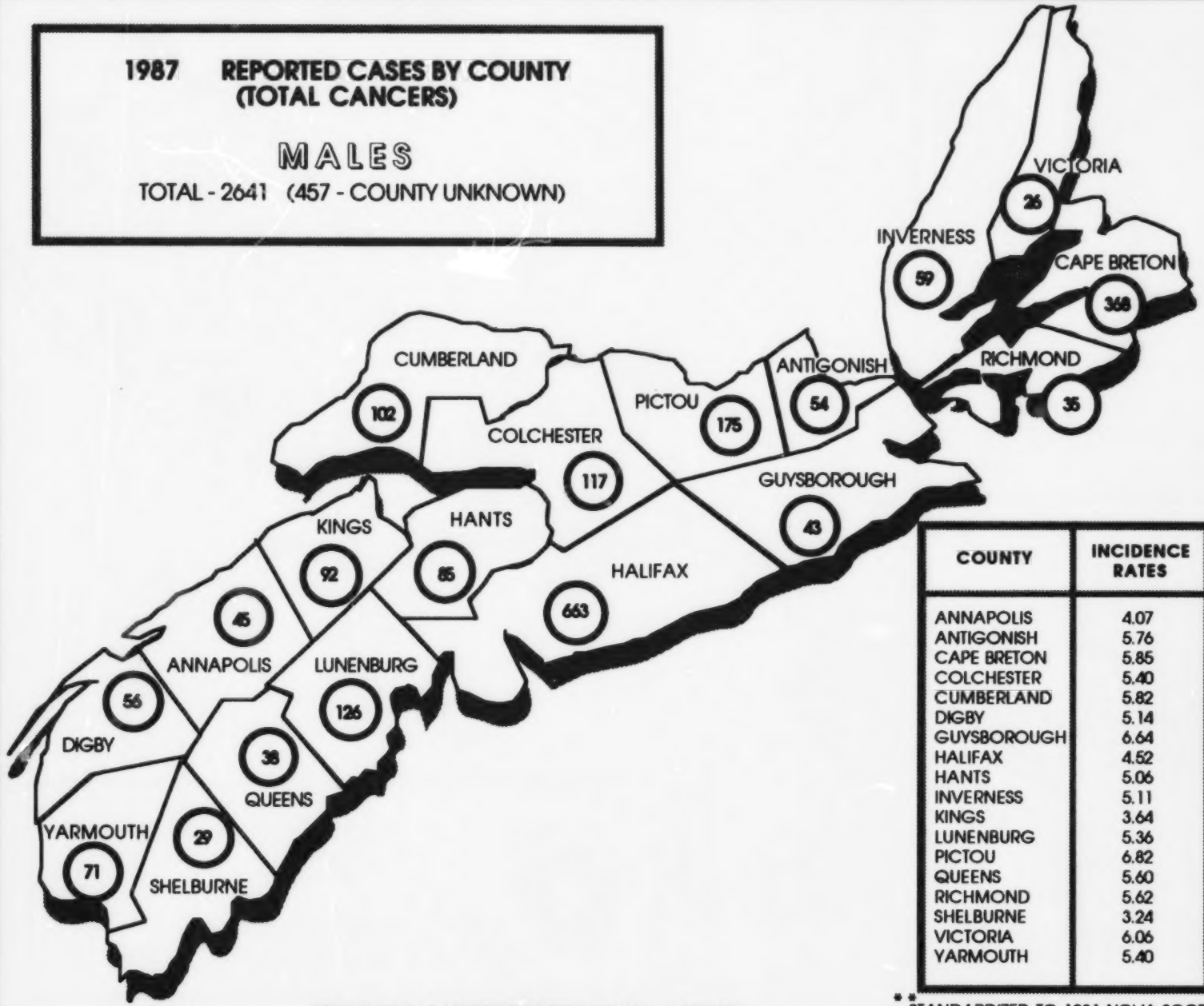
(USED IN 1987 INCIDENCE CALCULATIONS)

AGE BREAK DOWN	1986 NOVA SCOTIA			STANDARD 1 1981 NOVA SCOTIA			STANDARD 2 1981 CANADA		
	MALES	FEMALES	TOTAL	MALES	FEMALES	TOTAL	MALES	FEMALES	TOTAL
0 - 9	63,576	61,333	**124,909**	64,735	61,835	**126,570**	1,826,390	1,733,845	**3,560,235**
10 - 19	70,947	66,988	**137,935**	80,970	76,710	**157,680**	2,166,755	2,069,005	**4,235,760**
20 - 29	80,384	79,367	**159,751**	74,360	75,235	**149,595**	2,258,705	2,262,720	**4,521,425**
30 - 39	68,435	69,924	**138,359**	61,065	60,325	**121,390**	1,843,775	1,825,055	**3,668,830**
40 - 49	47,978	47,591	**95,569**	42,350	41,845	**84,195**	1,309,370	1,283,885	**2,593,255**
50 - 59	37,697	39,291	**76,988**	37,955	40,255	**78,210**	1,190,045	1,233,345	**2,423,390**
60 - 69	32,549	37,857	**70,406**	33,195	37,120	**70,315**	852,970	970,680	**1,823,650**
70 - 79	20,755	26,732	**47,487**	18,470	22,740	**41,210**	461,705	604,365	**1,066,070**
80 - 89	5,873	10,940	**16,813**	5,640	9,965	**15,605**	138,950	248,780	**387,730**
90+	152	536	**688**	830	1,855	**2,685**	19,610	43,235	**62,845**
TOTAL	428,346	440,559	**868,905**	419,570	427,885	**847,455**	12,068,275	12,274,915	**24,343,190**

1987 REPORTED CASES BY COUNTY (TOTAL CANCERS)

MALES

TOTAL - 2641 (457 - COUNTY UNKNOWN)



COUNTY	INCIDENCE RATES	AGE ** ADJUSTED RATES
ANNAPOLIS	4.07	3.11
ANTIGONISH	5.76	6.67
CAPE BRETON	5.85	5.96
COLCHESTER	5.40	4.91
CUMBERLAND	5.82	4.58
DIGBY	5.14	4.04
GUYSBOROUGH	6.64	5.64
HALIFAX	4.52	5.49
HANTS	5.06	5.08
INVERNESS	5.11	4.96
KINGS	3.64	3.54
LUNENBURG	5.36	4.41
PICTOU	6.82	6.42
QUEENS	5.60	4.36
RICHMOND	5.62	5.11
SHELBURNE	3.24	3.08
VICTORIA	6.06	4.76
YARMOUTH	5.40	4.43

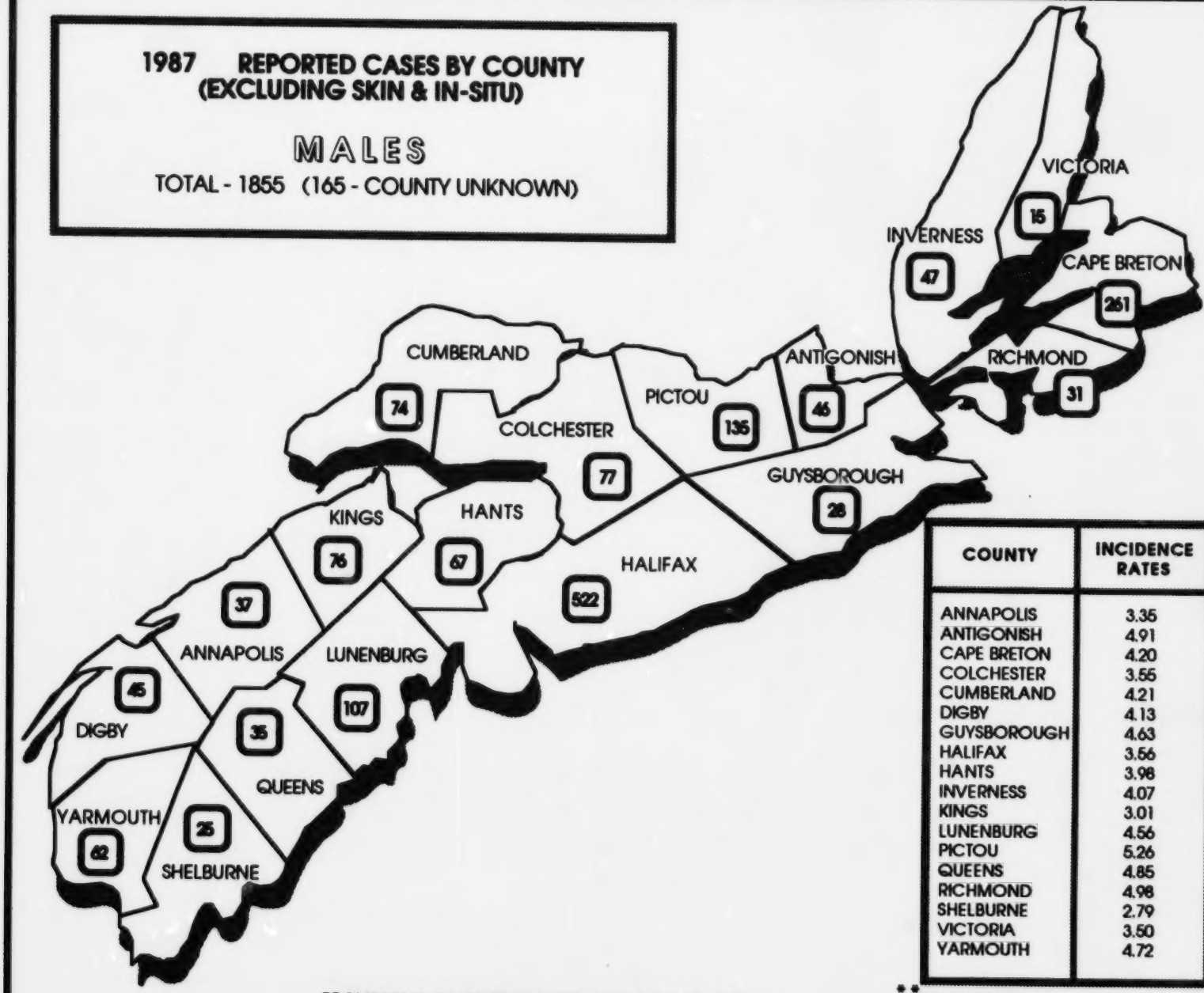
** STANDARDIZED TO 1981 NOVA SCOTIA POPULATION

PROVINCIAL CANCER REGISTRY OF NOVA SCOTIA

1987 REPORTED CASES BY COUNTY (EXCLUDING SKIN & IN-SITU)

MALES

TOTAL - 1855 (165 - COUNTY UNKNOWN)



COUNTY	INCIDENCE RATES	AGE ** ADJUSTED RATES
ANNAPOLIS	3.35	2.60
ANTIGONISH	4.91	5.69
CAPE BRETON	4.20	4.29
COLCHESTER	3.55	3.24
CUMBERLAND	4.21	3.27
DIGBY	4.13	3.25
GUYSBOROUGH	4.63	3.97
HALIFAX	3.56	4.30
HANTS	3.98	4.00
INVERNESS	4.07	3.93
KINGS	3.01	2.93
LUNENBURG	4.56	3.74
PICTOU	5.26	4.98
QUEENS	4.85	3.75
RICHMOND	4.98	4.48
SHELBURNE	2.79	2.65
VICTORIA	3.50	2.72
YARMOUTH	4.72	3.89

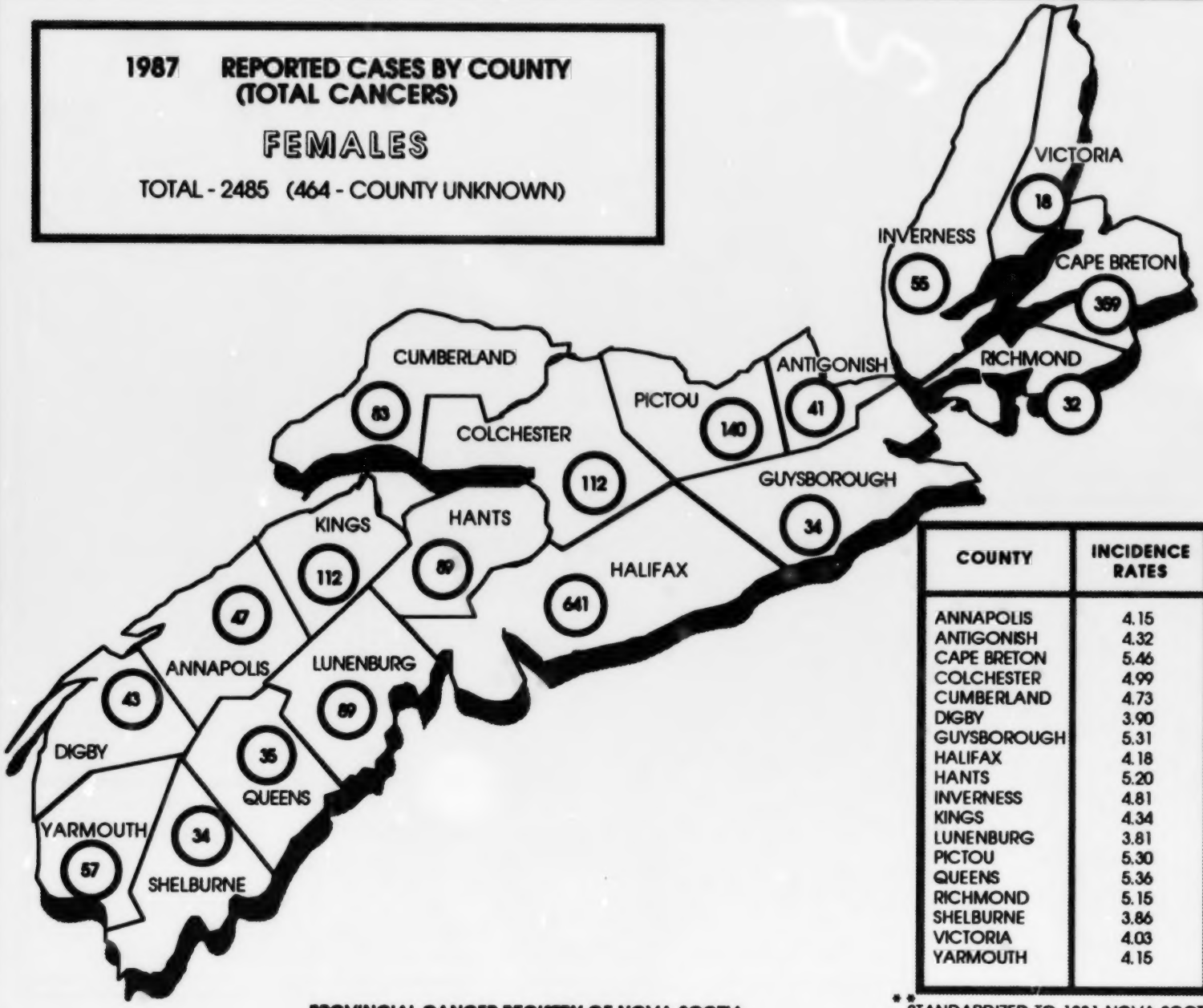
PROVINCIAL CANCER REGISTRY OF NOVA SCOTIA

** STANDARDIZED TO 1981 NOVA SCOTIA POPULATION

1987 REPORTED CASES BY COUNTY (TOTAL CANCERS)

FEMALES

TOTAL - 2485 (464 - COUNTY UNKNOWN)



COUNTY	INCIDENCE RATES	AGE ** ADJUSTED RATES
ANNAPOLIS	4.15	3.31
ANTIGONISH	4.32	4.84
CAPE BRETON	5.46	5.25
COLCHESTER	4.99	4.56
CUMBERLAND	4.73	3.59
DIGBY	3.90	3.40
GUYSBOROUGH	5.31	4.57
HALIFAX	4.18	4.64
HANTS	5.20	5.20
INVERNESS	4.81	4.98
KINGS	4.34	4.22
LUNENBURG	3.81	3.19
PICTOU	5.30	4.88
QUEENS	5.36	4.54
RICHMOND	5.15	5.12
SHELBURNE	3.86	3.74
VICTORIA	4.03	3.65
YARMOUTH	4.15	3.47

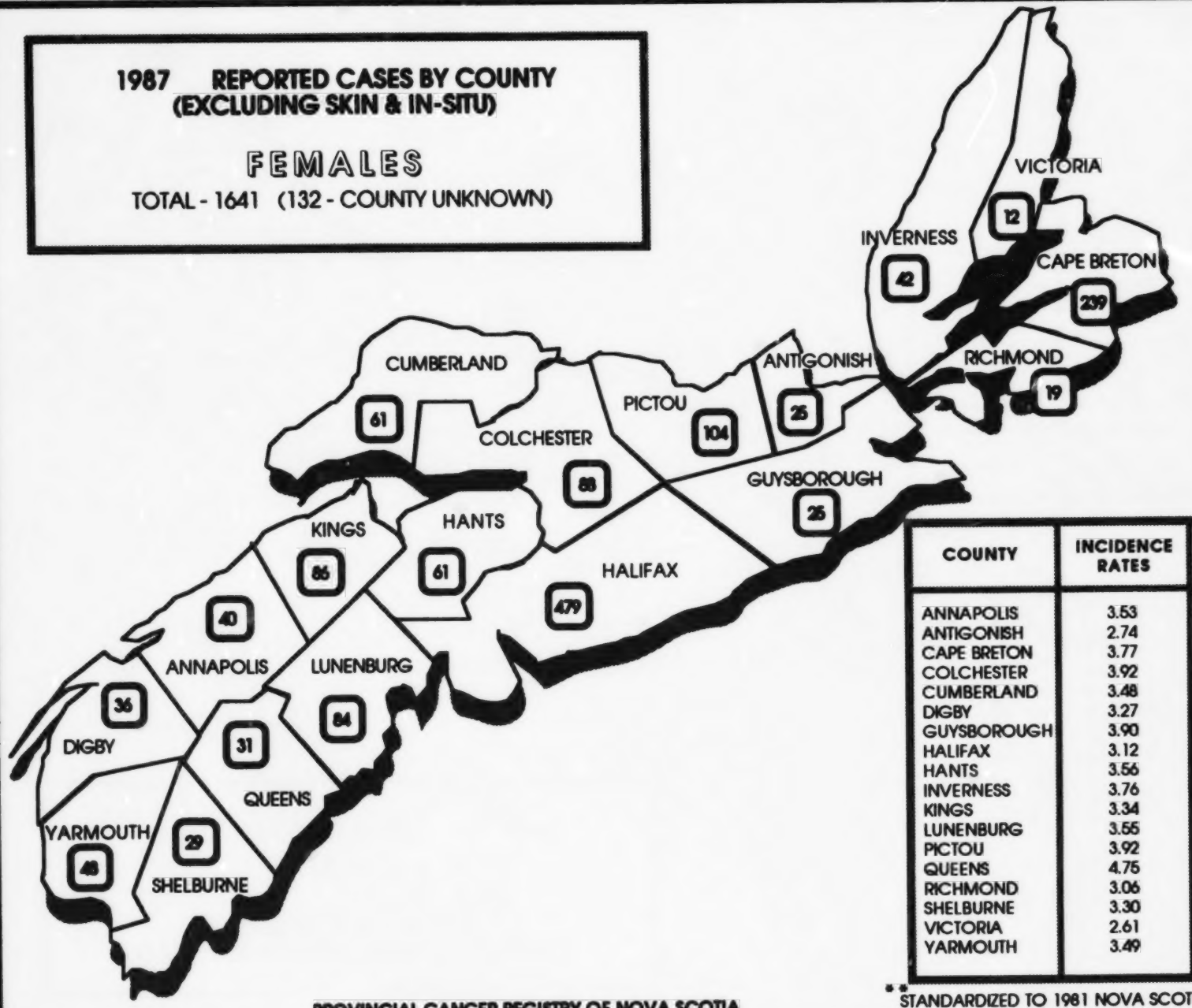
PROVINCIAL CANCER REGISTRY OF NOVA SCOTIA

** STANDARDIZED TO 1981 NOVA SCOTIA POPULATION

1987 REPORTED CASES BY COUNTY (EXCLUDING SKIN & IN-SITU)

FEMALES

TOTAL - 1641 (132 - COUNTY UNKNOWN)



COUNTY	INCIDENCE RATES	AGE ** ADJUSTED RATES
ANNAPOLIS	3.53	2.82
ANTIGONISH	2.74	3.09
CAPE BRETON	3.77	3.61
COLCHESTER	3.92	3.59
CUMBERLAND	3.48	2.65
DIGBY	3.27	2.84
GUYSBOROUGH	3.90	3.28
HALIFAX	3.12	3.51
HANTS	3.56	3.57
INVERNESS	3.76	3.87
KINGS	3.34	3.26
LUNENBURG	3.55	2.98
PICTOU	3.92	3.61
QUEENS	4.75	4.00
RICHMOND	3.06	3.04
SHELBURNE	3.30	3.19
VICTORIA	2.61	2.38
YARMOUTH	3.49	2.89

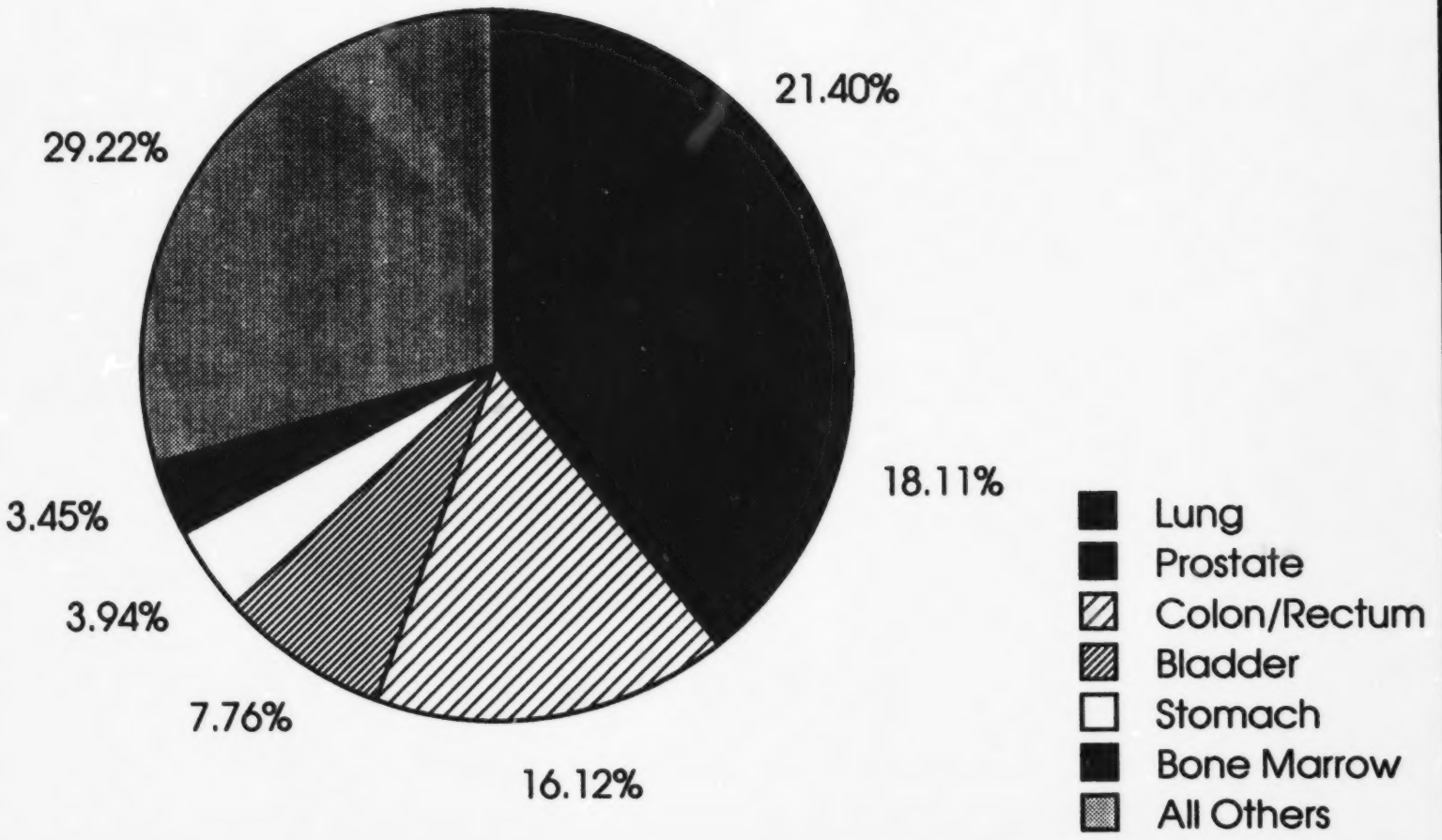
PROVINCIAL CANCER REGISTRY OF NOVA SCOTIA

** STANDARDIZED TO 1981 NOVA SCOTIA POPULATION

Most Common Primary Sites

Incidence (New Cases) 1987

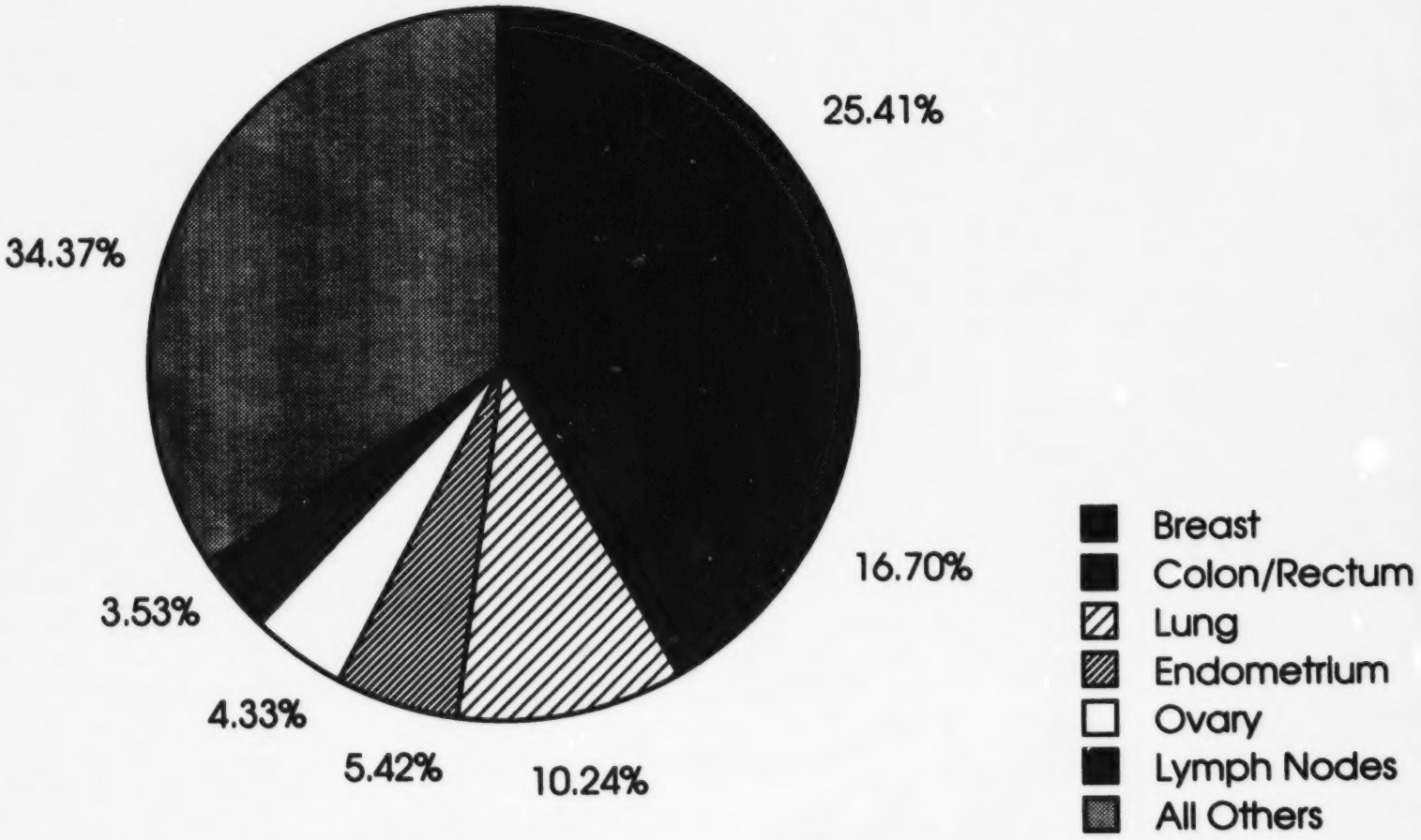
MALES (1855)



Most Common Primary Sites

Incidence (New Cases) 1987

FEMALES (1641)



FINANCIAL STATEMENTS

for the year ending
March 31, 1988

FINANCIAL STATEMENTS

Year Ended March 31, 1988

AUDITOR'S REPORT

To the Chairman and Members of the Cancer Treatment and Research Foundation of Nova Scotia

I have examined the balance sheet of the Cancer Treatment and Research Foundation of Nova Scotia as at March 31, 1988 and the statements of general fund revenues and expenses and continuity of special fund for the year then ended. My examination was made in accordance with generally accepted auditing standards and accordingly, included such tests and other procedures as I considered necessary in the circumstances.

In my opinion, these financial statements present fairly the financial position of the Foundation as at March 31, 1988 and the results of its operations for the year then ended in accordance with the accounting policies stated in Note 2 to the financial statements, applied on a basis consistent with that of the preceding year.

O. P. Cormier

O. P. Cormier, F.C.A.
Auditor General

Halifax, Nova Scotia
May 26, 1988

BALANCE SHEET

As at March 31, 1988

ASSETS

General Fund	1988	1987
Short term investments	$ 280,771	$ 260,530
Accounts receivable	258,691	304,864
Employee advances	6,701	8,047
Prepaid expenses	133,351	75,643
Due from Province of Nova Scotia (Note 3)	317,075	241,756
Due from Special Fund	123,743	95,504
	$ 1,120,332	$ 986,344

Special Fund		
Cash	$ 29,313	$ 58,500
Short term investments	353,823	265,038
Accounts receivable	70,637	32,498
	$ 453,773	$ 356,036

LIABILITIES AND FUND BALANCES

General Fund	1988	1987
Bank overdraft	$ 50,563	$ 73,683
Accounts payable and accruals	918,169	774,261
Unearned income	151,600	138,400
	$ 1,120,332	$ 986,344

Special Fund		
Due to General Fund	$ 123,743	$ 95,504
Fund Balances		
Radiation Oncology Trust Fund	4,811	5,445
Tumor Clinic Research Fund	2,791	2,791
Trial Funds	3,168	(1,567)
Restricted Funds (Note 4)	62,297	36,525
Unrestricted Funds	256,963	217,338
	330,030	260,532
	$ 453,773	$ 356,036

GENERAL FUND

Statement of Revenues and Expenses

For the Year Ended March 31, 1988

Revenues	1988	1987
Nova Scotia Department of Health and Fitness		
Insured services	$ 3,638,400	$ 3,321,600
Capital equipment	17,765	56,569
Hospital services	899,785	922,850
Reciprocal billings	74,862	71,845
Non-insured services	46,875	28,711
Other	10,304	13,703
	4,687,991	4,415,278
Expenses		
Nursing services	705,886	644,715
Technical services	407,801	359,711
Laboratory services	80,805	82,118
Radiation oncology services	551,563	591,864
Medical oncology services	350,255	304,398
Epidemiology services	(50)	29,822
School services	28,736	28,498
Medical physics	694,605	664,230
Health records	609,275	530,187
Clinic administration	784,740	763,290
Administration	397,369	407,191
Data processing	107,733	95,645
Research and development	6,270	7,000
Capital equipment	17,765	56,569
	4,742,753	4,565,238
Shareable deficit	$ 54,762	$ 149,960

CONTINUITY OF SPECIAL FUND

For the Year Ended
March 31, 1988

	Radiation Oncology Trust Fund	Tumor Clinic Research Fund	Trial Funds	Restricted Funds	Unrestricted Funds	Total
Balance, beginning of year	$ 5,445	$ 2,791	$ (1,567)	$ 36,525	$ 217,338	$ 260,532
Add: Donations	-	-	79,024	27,358	20,358	126,740
Investment Income	165	-	-	-	52,952	53,117
	165	-	79,024	27,358	73,310	179,857
Less: Clinical research	-	-	74,289	-	-	74,289
Research Grant	-	-	-	-	16,848	16,848
Bad debt expense	-	-	-	-	1,204	1,204
Other expense	799	-	-	1,586	15,633	18,018
	799	-	74,289	1,586	33,685	110,359
Balance, end of year	$ 4,811	$ 2,791	$ 3,168	$ 62,297	$ 256,963	$ 330,030

NOTES TO FINANCIAL STATEMENTS

March 31, 1988

1. **Authority**

The Cancer Treatment and Research Foundatio of Nova Scotia was established by the Cancer Treatment and Research Foundation Act which was proclaimed on November 25, 1980.

The objects of the Foundation are to operate multidisciplinary facilities for the diagnosis and treatment of cancer, research into problems relating to cancer, and related assistance, educational and training matters.

2. **Accounting Policies**

These financial statements have been prepared in accordance with generally accepted accounting principles modified by the policy of charging furniture and equipment purchases to expense in the year of acquisition. This expense is charged to the General Fund.

3. **Due from the Province of Nova Scotia**

The shareable deficit in the General Fund is normally recoverable from the Province of Nova Scotia. The account balance represents the accumulated shareable deficits being claimed by the Foundation.

As a result of reviews completed by the Department of Health and Fitness for the fiscal years 1985 to 1987, theDepartment has indicated that they will not cover the total deficits claimed by the Foundation. The amounts disallowed are presently under appeal by the Foundation as detailed on the following schedule.

	March 31, 1988	March 31, 1987
Amounts under Appeal		
1985	$ 30,966	$ 30,966
1986	60,830	60,830
1987	149,960	149,960
	241,756	241,756
Add: 1988 Shareable Deficit	54,762	-
Equipment Purchases	20,557	-
	$ 317,075	$ 241,756